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ABSTRACT

The change process as it affects program implementation is the topic of this paper, which presents an overview of current knowledge about this process, discusses the methodology appropriate to future research on and evaluations of program implementation, and considers several areas in which new knowledge must be developed if the success of future change efforts is to be enhanced. These issues are treated in terms of the implementation of Follow Through programs, a process that has been going on for 13 years and that new research and development activities are aimed at improving and continuing. The research on which the authors' discussion is based followed the Concerns-Based Adoption Model, which they describe in the report. (PGD)

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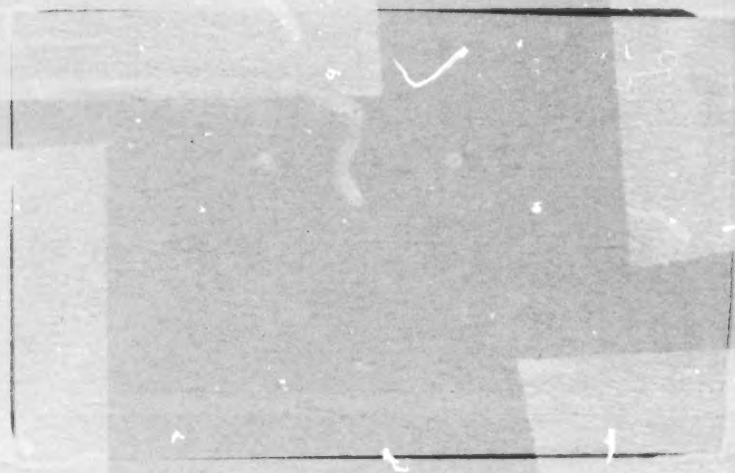

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# INVESTIGATING PROGRAM IMPLEMENTATION:

# A FIELD PERSPECTIVE

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R+D-No-3121

Paper presented at a conference on Documentation of School Improvement Efforts: Some Technical Issues and Future Research Agenda, Pittsburgh, March, 1981

# Investigating Program Implementation: A Field Perspective[1,2]

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Over the past thirteen years, Follow Through efforts have consumed the time, energy and resources of thousands of people and hundreds of institutions. The efforts have resulted in many important gains in knowledge, skills and experience by every participant, from children, parents and teachers, to trainers, sponsors and the research community. But as always, every bit of learning reveals more we still do not know. The new Follow Through research and development activities offer us a powerful opportunity to both apply what we have learned, and pursue, in a perhaps more thoughtful and systematic way, what remains a mystery.

How are programs implemented? What are vital attributes of a successful implementation effort? What tools do we have to explore these questions?

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[1]The research described herein was conducted under contract with the National Institute of Education. The opinions expressed are those of the authors and do not necessarily reflect the position or policy of the National Institute of Education. No endorsement by the National Institute of Education should be inferred.

[2]This paper was presented at a conference on Documentation of School Improvement Efforts: Some Technical Issues and Future Research Agenda, Pittsburgh, March 1981.

What answers do we already have? How can ongoing evaluation by and of Follow Through programs help us add to our knowledge about implementation? What should be the direction of new policies that will facilitate the use of Follow Through models? These and other questions are worthy of exploration as new Follow Through activities get underway.

This paper addresses such questions, and does so from what we call a "concerns-based" perspective. Unlike many change researchers and policy analysts, our work and our view of the world, begins at the "grass roots" -- with the teacher and the on-line administrator whose responsibility it is to "make change happen." We consider the concerns these persons have, how each individually uses a program, and what the program looks like in each classroom, in each school. We pull from all three of House's (1980) perspectives on innovation: the cultural perspective, in our focus on the teacher and his/her view and participation in the change process; the political perspective, in our attention to the influences and dynamics of various individuals and groups as implementation unfolds; and the technological perspective, in our attempt to understand how the innovation itself is used, adapted, transformed, mutated. Ours is an individual-oriented, interactive, dynamic and systemic view of school improvement.

We believe that this is an important perspective, although not the only one, from which to view future Follow Through efforts, particularly if one is to arrive at practical, realistic understandings of how they may be improved. In this paper we begin by describing <u>our current understandings</u> of the change process, explicating in more detail our assumptions and the concepts that guide our view. This is an attempt to describe initially what we -- and others working in similar areas -- now know. From there we turn to what we regard as <u>important unknown areas</u>, both in terms of how to <u>investigate</u> program implemen-

tation, and how to accomplish program implementation. The first set of issues and themes is largely methodological; the second is more oriented towards knowledge production.

## Program Implementation from the Concerns-Based Perspective

### The Model

Reseach on the change process began at the Texas R&D Center in the early 1970's, following a decade of heavy emphasis on development and dissemination in the educational community, and prior to the proliferation of studies of the effects of these activities. "Change agents" ourselves, we came to have some hunches about how individuals involved in program implementation actually felt and behaved as they moved through the often traumatic and trying process. Our early ideas and subsequent years of focused research in schools and universities, have resulted in the definition of several critical dimensions that help us describe how individuals experience the change process. Current work focuses on determinants of change in individuals: the actions, events, and contextual factors that influence the success or failure of implementation efforts.

The Concerns-Based Adoption Model (CBAM) (Hall, Wallace & Dossett, 1973), the conceptual framework for our research, is based on several assumptions about change. First, change is a process, not an event; it takes time and continual adjustments in attitudes, skills, resources, and support to be successful. Secondly, change is accomplished by individuals, not institutions; that is, before an institution can be said to have changed, individuals must be behaving differently. We further believe that change influences people differently, and so is a highly personal experience. However, there appears to be some predictable, developmental patterns to how individuals change, both in their feelings towards, and skill in using new programs. Lastly, we believe that it

is possible to influence the change process, to act upon it, or "intervene" in ways to promote -- or sometimes inhibit -- the progress of implementation.

The CBAM has three dimensions which are descriptive in nature. They are used to diagnose the "state" of a change effort at any point in time and to monitor its progress longitudinally. Seven Stages of Concern About the Innovation have been defined (Figure 1) (Hall & Loucks, 1978b); these are roughly equivalent to the developmental stages Fuller (1969) found expressed by pre-service teachers, as they progressed from self-orientation, through focus on the task of teaching, and finally to emphasis on student impact. During the change process, individuals appear to similarly experience, and progress through, the Stages of Concern. Knowing what kinds of concerns individuals are experiencing, or are likely to experience, allows for training activities to be more personally and effectively targeted.

The second dimension, Levels of Use of the Innovation (Figure 1) (Hall, Loucks, Rutherford & Newlove, 1975), describes eight discrete levels individuals may demonstrate as they interact with an innovation, gaining knowledge, experience and expertise in its use. The focus here is upon the behaviors of users and nonusers of innovations. As with the Stages of Concern dimension there is no guarantee that a given individual will advance through any or all of the levels. In general, however, it appears that individuals move from Nonuse, Level 0, through Mechanical Use, Level III, as the change process unfolds. Experience indicates that in many change efforts individuals are not given sufficient time to move beyond Mechanical Use before other innovations are introduced. This is particularly true of complex innovations and innovation bundles, such as most Follow Through models represent. This often results in failure to institutionalize the new program. Ideally individuals should have time and support at the point where they are at least at Level IVA Routine.

Figure 1

STAGES OF CONCERN: TYPICAL EXPRESSIONS OF CONCERN ABOUT THE INNOVATION

| | STAGES OF CONCERN | EXPRESSIONS OF CONCERN |
|---|---|---|
| IMPACT | 6 REFOCUSING | I have some better ideas about something that would work even better. |
| | 5 COLLABORATION | I am concerned about relating what I am doing with what other instructors are doing. |
| | 4 CONSEQUENCE | How is my use affecting kids? |
| TASK | 3 MANAGEMENT | I seem to be spending all my time in getting material ready. |
| SELF | 2 PERSONAL | How will using it affect me? |
| | 1 INFORMATIONAL | I would like to know more about it. |
| | 0 AWARENESS | I am not concerned about it (the innovation). |

LEVELS OF USE OF THE INNOVATION: TYPICAL BEHAVIORS

| LEVEL OF USE | | BEHAVIORAL INDICES OF LEVEL |
|---|---|---|
| VI | RENEWAL | The user is seeking more effective alternatives to the established use of the innovation. |
| V | INTEGRATION | The user is making deliberate efforts to coordinate with others in using the innovation. |
| IVB | REFINEMENT | The user is making changes to increase outcomes. |
| IVA | ROUTINE | The user is making few or no changes and has an established pattern of use. |
| III | MECHANICAL USE | The user is using the innovation in a poorly coordinated manner and is making user-oriented changes. |
| II | PREPARATION | The user is preparing to use the innovation. |
| I | ORIENTATION | The user is seeking out information about the innovation. |
| 0 | NONUSE | No action is being taken with respect to the innovation. |

The third dimension, Innovation Configurations (Hall & Loucks, 1978a; Hall & Loucks, 1981), describes the innovation itself, and the different operational patterns that result from individual and institutional adaptation of its components. The dimension emerged from our early recognition that different "users" of the same innovation were in fact using it in clearly different ways. Applying this idea in several implementation studies has led us to believe that different configurations of an innovation are likely to be associated with different outcomes, thus necessitating the need to look carefully at what components each user has implemented.

A fourth dimension of the CBAM may be used to plan and design the flow of a change effort. It comprises the interventions which influence use of the innovation. A rudimentary Intervention Taxonomy has been developed which describes (1) different levels of intervention -- incident, tactic, strategy, game plan, policy -- which differ in terms of their scope, and (2) different functions of interventions, e.g., training, developing supportive organizational arrangements, dissemination, evaluation (Hall, Zigarmi & Hord, 1979).

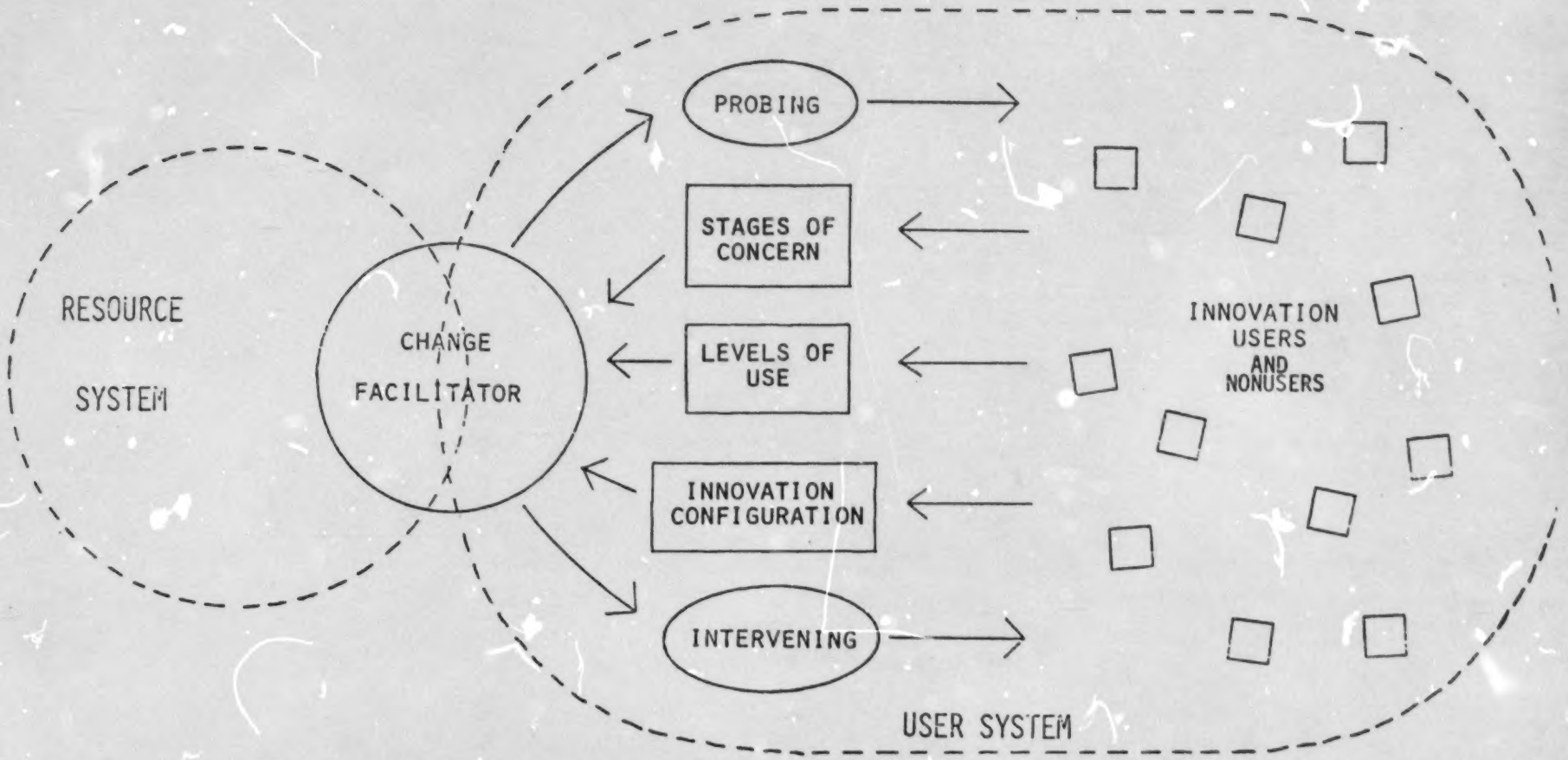
The interaction of these dimensions in the CBAM provide a dynamic, adaptive model for viewing change process. As illustrated in Figure 2, a change facilitator probes individuals in the user system (school, district, university) to determine their Stages of Concern, Levels of Use, and configurations of the innovation in place. The facilitator then adapts his/her behavior, employing interventions appropriate to where users (and nonusers) are, to encourage implementation in a more data-based and personalized manner.

## The Tools

Assessment of the CBAM dimensions described above may be done through a variety of methods. Of most use to evaluators and researchers are the Stages of

Figure 2

THE CONCERNS-BASED ADOPTION MODEL

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Concern Questionnaire (Hall, George & Rutherford, 1977) and the Levels of Use Interview (Loucks, Newlove & Hall, 1976). Innovation Configurations most often utilizes a checklist of components, derived from definitions of program characteristics and possible variations in their use (Heck, Stiegelbauer, Hall, & Loucks, 1981). Interventions are described and coded utilizing a system derived from a combination of qualitative and quantitative data collection and analysis procedures (Hord, Hall & Zigarmi, 1980; Hall & Associates, 1980a). These tools have been utilized by program developers, staff developers, evaluators and researchers with a wide variety of innovations in a wide variety of settings. Among those applications most relevant to future Follow Through efforts are: a study of a district-wide DISTAR implementation (an innovation similar in nature to the Follow Through Direct Instruction Model) (Emrick & Peterson, in progress), a nationwide study of federal dissemination strategies, including the National Diffusion Network, ESEA Title IVC and Bureau for Education of the Handicapped marketing strategy (Crandall, in progress), evaluations of ESEA Title IVC projects (Roecks & Andrews, 1980) and an evaluation and research study of district-wide implementation of a science curriculum (Hall & Associates, 1980b).

## Key Understandings

At this time results of investigations of the change process are beginning to show some convergence. In many instances our research contributes to this convergence. These understandings are described briefly below, as well as other findings which have emerged solely from our own research.

### Phases of the Change Process

In recent years it has become increasingly clear that there are distinct phases or, as Berman (1979) has suggested, "subprocesses" that constitute the

change process (Hall, 1973; Havelock, 1971; Rogers & Shoemaker, 1971). The labels for these phases vary from author to author, and the exact distinction between each of the phases remains unclear. In general, however, the change process includes the following: development, dissemination, adoption, implementation, institutionalization, and what we would call "refinement." Each phase has its own characteristics and dimensions, and requires different processes, actors, and policies.

It is important to note at this point in the current paper, that our focus is on the implementation phase, as requested. Certainly, other points may be made that apply directly to other phases and have equally powerful implications for future Follow Through efforts.

Implementation Can Be Assessed

For years, the actual measurement of implementation was ignored. Assumptions were made that a program, or in the case of research, a treatment, was implemented simply because decision makers said it was so. Studies resulting in the lack of significant differences stimulated the need to assess implementation before evaluating outcomes (Charters & Jones, 1973; Hall & Loucks, 1977).

Although problems and issues still exist with respect to measuring implementation (see discussion in later section), we have come a long way towards perfecting a variety of techniques. The CBAM model offers three ways to assess implementation; Follow Through evaluations have employed others (Stallings & Kaskowitz, 1974); reviews of other techniques are available in the literature (Fullan & Pomfret, 1975; Leinhardt, 1980). It is critical and possible to validly assess the extent of implementation of a program.

Change Is A Developmental Process

"Change is a process" is a phrase that captures what practitioners have known for years and recent research is clearly confirming (Emrick & Peterson, 1977b; Hall & Rutherford, 1976). Such research indicates that it takes a minimum of three years and often longer, to implement an innovation. The process involves developmental growth on the part of all individuals involved, as well as for the groups and institutions experiencing the change. As a result, different support, staff development, and other activities must focus on different stages of the process (Emrick & Peterson, 1977a; Hall, 1979; Loucks & Zigarmi, 1980).

The fact that individuals change developmentally also contributes to our understanding of when evaluations should be conducted. Levels of Use research indicates that a large portion of first year users of an innovation function at a Mechanical level (Hall & Loucks, 1977). Outcome evaluations conducted after one year of use are apt to reflect less impact on students than perhaps even the previous year, when the innovation was not used. More appropriate timing would be when teachers have routinized use of the innovation, which is typically at least two years into the effort. Thus implementation research has shed light on the timing of evaluation studies.

Program Adaptation

As the change process unfolds, it is clear that those involved make significant changes in the innovation itself. These adaptations range from minor adjustments to radical transformations, and may be influenced by teacher, student, or institutional need. These changes influence the nature and success of an implementation effort (Berman & McLaughlin, 1975; Hall & Loucks, 1978a).

Successful Implementation

For years, the literature was filled with examples of unsuccessful change efforts (Charters & Jones, 1973; Goodlad & Associates, 1970; Gross, Giaquinta & Berstein, 1971). More recently, we are not only finding successful implementations, but are documenting them and understanding in some way what made them work. One such effort, a "concerns-based" implementation, has been described and evaluated by us and our research and school district-based colleagues (Hall & Associates, 1980b). Other successful implementations are described in cross-national studies of federally funded programs (Berman & McLaughlin, 1977; Emrick & Peterson, 1977a).

The Influence of the School Principal

For years it has been conventional wisdom that school administrators are critical to successful education. Research and evaluation of implementation efforts support this view (Baldridge & Deal, 1975; Berman & McLaughlin, 1977; Hall, Hord & Griffin, 1980; Miles, 1971).

The key understandings described above have specific implications for the implementation of Follow Through programs. Future programs can be more successful if these findings are applied. In addition, several questions and issues are raised that still need careful study. These are related to both how best to investigate/evaluate Follow Through programs and how best to implement them. Issues in these two areas are discussed separately.

## Issues in Investigating Program Implementation

Program implementation has been investigated over the years using a wide variety of strategies, perspectives and measurement devices. The choices made in how to investigate implementation often proscribe what kind of findings, and therefore potential applications, will result. Thus the issues surrounding the

act of investigation are critical to improvement of Follow Through programs. Several issues are discussed below.

Different Perspectives

There are many ways to cut the "perspective" pie. House (1980) describes three perspectives from which implementation has been studied: technological, political and cultural. One might also differentiate between policy level and local perspectives. Or consider differences between investigations with a sociological, anthropological, psychological, or political viewpoint. Depending on the perspective, different questions are posed, different assessment procedures are used and different samples are selected to provide information. And, of course, depending on the perspectives, findings are weighed and interpreted differently.

The National Institute of Education has argued for a study of the change process from a variety of perspectives, so as to provide the potential for shedding more light on the complex process of change. We would argue for a more eclectic perspective in conducting research -- one which takes account of the complex of events, motivations, influences and interactions, and one which results in implications for not only policy, but for the school-based facilitator as well. The concerns-based perspective is one possibility. Others may be developed from an understanding of and borrowing from the multitude of perspectives that exist.

Follow Through programs clearly merit understanding from a variety of perspectives. The program itself must be defined and its adaptations understood; the motivations, concerns, "worlds" of teachers and administrators need study; and the various individuals and groups, and their interactions must be the focus of future research. Indepth focus is important, but comparison across sites, as

well as within each Follow Through model (local, sponsor, federal), will also contribute to our knowledge about the process of change.

By selecting and maintaining a broad, eclectic perspective the future Follow Through programs can be best understood.

Assessing Implementation

If we are to understand what influences the success of Follow Through efforts, it is clearly important to know what exists, what is "implemented," what the program looks like in operation. How is that accomplished? We would offer our own measures, and then offer criteria for selection of others.

As noted earlier, our measure of Levels of Use comprises a generic scale to describe an individual's interaction with a program. Since it is generic in nature, it is possible to compare Level of Use distributions across programs, providing information about different rates of progress in the change process for different innovations. For example, a comparison of two Follow Through models might reveal that users of one quickly progressed to Mechanical Level of Use, and few moved further on the scale; users of the other model might have shown more of a spread, with many reaching the Refinement level or above within two years! These results might provide insights into the effects of different training procedures used, expectations set for teachers, and/or settings where the models were being implemented.

Similarly, Stages of Concern is another generic variable. Concerns data provide information on the feelings of individuals affected by a program, and allow cross-program comparisons utilizing this conceptual framework. Use of Stages of Concern might help identify a model which characteristically raises teachers' Personal concerns, or one where Management concerns linger long after

sponsor trainers have stopped providing assistance. Again, cross-model comparisons are possible with such a generic variable.

Innovation Configurations represents a more typical, program specific assessment tool. It begins with the components of the program and assesses how these are implemented in each particular situation (classroom, school) under study. These components might be assessed along a fidelity continuum (i.e., how closely the implementation resembles the "developer's model"); they might be assessed in terms of frequency of use; or they might simply be descriptive of variation in use, with no value given any particular variation. Because this dimension is innovation-specific, different Follow Through models would have different components, and thus different procedures for assessment. For example, a bilingual model would contain components dealing with the language of instruction and materials; a behavior modification model would have teacher behavior components dealing with specifics of reinforcement and response to students. With different components, no direct cross-model comparisons can be made, but cross-site comparisons within a single model may yield fruitful results. It is also possible to assess adaptation and ultimately link it to program outcomes.

These measures allow the evaluator/researcher to acquire a snapshot of implementation by individuals at a single point in time, or a longitudinal view of changes over time. Should this be desired, several issues remain for those making choices among these or other possible assessment techniques.

Generic vs. Innovation-Specific Techniques. As noted above, our work utilizes generic concepts (Levels of Use, Stages of Concern) to assess implementation, as well as those that are specific to the innovation under study (Innovation Configurations). When one innovation, e.g., one Follow Through model, is the focus of study, all are useful, particularly for understanding the adapta-

tions made within the model and how those relate to concerns about and comfort with using it. Leithwood (1980) and Leithwood and Montgomery (1980) have used such a combination of generic (Levels of Use) and specific measures in their evaluations of specific curriculum innovations.

When more than one innovation is studied, the choice of measures becomes more complex. Questions such as these might be asked:

1. Which innovations (models) are more appropriate for which settings?
2. Which innovations (models) work better for which kinds of children?
3. What are the the change process-related problems and benefits associated with implementation of different models?

For each of these questions, it is necessary to assess implementation. Generic concepts, such as Levels of Use and Stages of Concern, could shed considerable light on the questions. An innovation-specific measure would also be useful, but analysis to compare across innovations is a critical problem. Clearly, few models share the same components. In the Study of Dissemination Efforts Supporting School Improvement, we delineated components for forty-five different innovations. Each innovation varied in its components and possible variations of the components. How to ascribe each user an implementation score to be compared across programs was problematic.

A similar situation will exist in future Follow Through studies, particularly those which involve more than one model. Before implementation is assessed the following questions must be answered:

1. Should both generic and innovation-specific measures be used?
2. If innovation-specific measures are used, will they be purely descriptive (e.g., what variation is teacher using?), or fidelity-oriented (e.g., how well or to what extent are the innovation's components in place?)?
3. If there is to be an extent of implementaion measure, how is extent of use of one model to be compared to extent of use of another model?

4. Models clearly differ in terms of their complexity. How does complexity influence extent of implementation? Can comparisons across models be made without weighting implementation scores by complexity? What exactly is complexity and how might it be operationalized?

More questions arise, but these will serve here to underline the "complexity" of the issue. Hopefully, the conceptualizing done in the study noted above will shed some light on this situation, and alternative solutions will be offered by the time future Follow Through efforts are underway.

Rigor and Practicality. Practitioners who are attracted to our work tell us that they appreciate its psychometric quality, while at the same time the concepts make sense and are immediately applicable. Implementation research must be psychometrically sound, with reliable and valid assessment procedures, but it must also be cost effective and useful to practitioners if it is to have a lasting influence.

We would argue that real world constraints must be acknowledged up front in designing research related to future Follow Through efforts. First and foremost, money is an object. Often researchers develop highly sophisticated measures for assessing implementation of a single program, assessments that require indepth, repeated observations, interviews, document searches, questionnaires. For these procedures, costs, in terms of time and travel, are large. (The authors are unfamiliar with cost effectiveness studies of implementation research, but the high cost is clear from our own experiences.) It is also possible to develop or utilize measures that are more cost effective. The CBAM tools are one example. The issue must be faced: can future studies afford to go to any expense, or must cost too be a consideration in the development or selection of assessment procedures?

The other aspect of the practicality issue is the usefulness of resulting techniques and data. Techniques developed to assess implementation which cannot afterwards be utilized by practitioners on their own have fallen far short of their potential. School district evaluators are always searching for techniques to help them look more carefully at their programs; they can rarely, however, afford seven days of training across the country, or a sophisticated computerized analysis system. Additionally, data from implementation studies must be presented in straightforward, understandable language and format. Not only must school district evaluators be able to understand it, but those responsible for facilitating programs (curriculum coordinators, principals, specialists, etc.) must have information they can apply "tomorrow."

Perhaps it is still an issue whether research/evaluation findings must be useful and practitioner-oriented. However, the financial realities are such that studies with "limited" or "future" application may be low on the priority list. And the political realities, heard louder everyday, convince us that school people will simply not stand still for more studies from which they do not receive direct benefit.

The issue remains: how can we insure that the highly complex notion of implementation is assessed in ways that both make sense and are useful to the field, and also meet research needs for rigor and validity?

The Process/Product Evaluation Link

In discussing implementation evaluation, it is important not to forget outcome evaluation (Hall, 1981). One final methodological issue is how these two are to be linked. Having accepted a rationale for measuring implementation, one must not forget that the outcomes that result are the ultimate criteria for success of Follow Through programs.

One rational, linear view of this link is that the "more" a program is implemented, the "more" outcomes may be expected. Another view is that each program has its critical components, and implementation of these influences outcomes. At the other extreme, it has been said that no amount of implementation is necessary for outcomes to result; rather, the process of change, of exploring a new program, being introspective about one's current practice and doing "something different," will tend to produce anticipated outcomes.

Other propositions exist about the link between implementation and outcomes. It is only possible to shed light on this situation if assessment of outcomes and implementation occur simultaneously, if these assessments utilize a longitudinal design, and if analyses are contrived to compare various "extents" of implementation, configurations of programs, and other mediating factors. Future Follow Through efforts would benefit from such careful comparisons.

## Issues in Implementation

### Participation and Adaptation

These two words, much heard in the literature today, point to one of the knottiest problems Follow Through sponsors will have to face as they begin new rounds of development and implementation. Traditionally, implementation was the endpoint of the R, D, D & A perspective. A program is developed based on the best available research, is disseminated and adopted "as is" by teachers, schools, districts. Implementation ensues. When the program has sound research behind it, and has been "validated" in development site as well as others, it is assumed that these positive outcomes will accompany replications of the program.

Yet research indicates that teachers do not always "replicate" programs, but rather adapt them (Berman & McLaughlin, 1975; Hall & Loucks, 1978a). Fur-

ther, in some cases positive relationships have been found between successful implementation and such adaptation (Berman & McLaughlin, 1975). In other cases, some degree of adaptation has been found to relate to higher outcomes than either high fidelity or major adaptation (Reidy & Hord, 1979). A growing number of individuals involved in the study and practice of implementation insist that teachers must participate in the implementation as more than just users, that they must have some hand in the development, design, planning, etc., if the program is to be successfully implemented.

There are a lot of opinions about what teacher participation should involve, but there is little research to back them up. There remains a school of thought that teachers are busy teaching full time, and it is neither their job nor their desire to be involved in the design or planning for new programs. Besides, participation is very costly in time and resources.

Follow Through, by its nature, will begin with research and development; a model will have certain components. How prescriptive these components are, how much adaptation is possible, how sponsor staffs involve teachers in the implementation efforts will all vary. They provide ample opportunities for research to focus on such questions as:

1. What is teacher ownership? Do acceptance and classroom integration of new district or school programs relate in any way to contract agreements, personality factors or the mesh between teacher and program philosophies?

2. During each phase of the process of program development/implementation, how can teachers be involved to ensure their ownership, and yet maintain the critical elements of the program? In what activities must/can teachers be involved (e.g., curriculum development, inservice leadership, implementation design)?

3. Can teacher ownership be ensured if only some teachers participate? Is there such a thing as teacher representation?

4. What is the influence of teacher adaptation on expected innovation outcomes? What kinds of teacher adaptations are more influencial, positively or negatively, than others?

5. Do some implementation designs develop the needed teacher ownership more readily than others?

These are just a few of the many questions future Follow Through studies can help respond to in this critical area.

## Roles and Relationships

Change requires the participation of individuals from a number of role groups: teacher, principal, central office coordinator, sponsor staff, evaluators, federal agency personnel. How responsibilities are allotted, what change process interventions are made by whom at what point in the process, are all questions that require futher study. Research questions for future Follow Through studies may be developed from past and current studies of "linking agents" (Fullan, 1980; Louis, Molitor, Spencer & Yin, 1979; Madey, 1980), principals (Hall, Hord & Griffin, 1980), and some interrelationships (McLaughlin & Marsh, 1978). These may include:

1. What does the school principal do that relates to successful implementation?

2. What phases of the implementation process must sponsor staff be most involved with? How can they interface with on-site facilitators to ensure follow-up and yet eliminate unnecessary expense?

3. Who is responsible for maintenance of the program once initial training has occurred? What constitutes appropriate and adequate maintenance interventions?

4. Is teacher collaboration to be encouraged? If so, what results ensue, and whose responsibility is it for its maintenance?

## Management of the Change Process

Our experiences indicate that most implementation efforts have a "serendipitous" game plan; they emerge or evolve, rather than follow preplanned, staged and proactive procedures. We believe that this is primarily because there is little known about how to actually manage the change process. Few, if any, on-

line practitioners have had -- or remember, if they have -- a course in change management. Fortunately, many have enough good sense and intuition to keep most implementation efforts from floundering and being lost altogether. But so much reinvention of the wheel is very costly in terms of time, resources, and psychic energy.

In our research we are exploring the management of the change process from a conceptual as well as a practical base. We begin from a sense of where individuals can be when change is successful. We are attempting to understand the area of interventions -- what interventions are made, by whom, with what effect. Several efforts have been made to "game plan" or design implementations in the detail and specificity they deserve, while maintaining an adaptive mode as they actually manage the process. For example, we know that there are several levels at which interventions take place, and planning must occur at all levels (Hall, Zigarmi & Hord, 1979). We know that many game plan components must be included, not only training, but evaluation, development of organizational support systems, and external communication. When managers of change efforts know what needs to be done, have such a framework to start with, they are less likely to ignore critical elements until it is too late. How many projects wait until the last year before realizing evaluation should have started before year one? How often are supplies unavailable because they were ordered too late? And how many efforts have failed ultimately because continuation funding was not somebody's responsibility from the start?

Good management means continual anticipation of next steps. It means a framework for who will do what when -- one that will flex and change, but will eliminate a crisis orientation as much as possible. Follow Through implementation efforts should be studied for the nature of their change management, their game planning. In some cases, an experimental study might be conducted which

compares purposely game-planned efforts with those whose game plan emerges. Follow Through studies could reveal more about the management of change, since every implementation effort offers such an opportunity.

## Innovation Overload

However the term may be operationalized, "sizes" of innovations vary. We are often struck by how many "innovation bundles" are being implemented in schools. An innovation bundle is actually more than one innovation, each requiring a different set of behaviors from its users. Follow Through models are a good example. They frequently are composed of multiple classroom innovations (e.g., new teaching strategies, curricula, bilingual education), and additional innovations as well (e.g., parent involvement).

Because Follow Through is not the only source of innovation bundles (consider Competency-Based Education, Individually Guided Education, Mainstreaming), we need to better understand the implementation of such phenomenon. When teachers are introduced to a bundle, we know their concerns do not focus on each innovation equally. They must proceed through each step of the change process with each innovation. How do they "learn" each innovation in the bundle? Do some required behaviors interact destructively with others? Is adaptation -- drastic or otherwise -- a result of multiple implementations? When does overload occur? How should the change process be managed such that overload is avoided? These and many other questions are possible foci of Follow Through studies of innovation bundles.

## Conclusion

This paper has described many of what we believe to be the most perplexing and interesting implementation questions that the study of future Follow Through programs might address. To do so, we have described the conceptual

model underlying our own work, as a stepping off point for more indepth and larger scale research. Issues of implementation assessment have been discussed, with implications for policy research, evaluation and practice. Finally, issues of implementation have been considered: what do we still need to know if future change efforts are to improve learning for our nation's students?

Follow Through programs, and studies of these programs, offer far more opportunities for learning than our resources will allow us to take advantage of. However, we do have a chance to advance implementation from the "seat of the pants" operation that it often is, to a thoughtful, personalized and rewarding activity that it may become.

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